NEW SPECIES OF REARED GALL MIDGES (ITONIDIDÆ).

By E. P. Felt, State Entomologist,

Albany, N. Y.

The following descriptions are of species which have been reared by various correspondents and submitted for identification.

Rhopalomyia sabinæ new species.

Exuvium. Mesonotum, head, leg and wing cases infuscated. The remainder mostly whitish.

Pupa. Length 3 mm., rather stout, the antennal, wing and leg cases brownish. Mesonotum somewhat darker, the abdomen yellowish orange with reddish tints.

Male. Length 3 mm. Antennæ extending to the fourth abdominal segment, sparsely haired, fuscous yellowish, 17 segments, the 5th with a stem about one third the length of the cylindrical basal enlargement, which latter has a length about 2½ times its diameter. Palpi, first segment short, irregular, the second shorter, broadly ovate. Mesonotum dark reddish brown, scutellum fuscous yellowish. Postscutellum yellowish, abdomen sparsely haired, mostly dark brown. Genitalia yellowish orange. Halteres fuscous basally, reddish orange distally, coxæ fuscous yellowish, femora, tibiæ and tarsi mostly pale yellowish. Claws rather long, slender, the pulvilli distinctly longer than the claws. Genitalia; basal clasp segment short, terminal clasp segment moderately long, curved, dorsal plate deeply and triangularly emarginate, the lobes broadly rounded, ventral plate long, broad and broadly rounded.

Female. Length 3.5 mm. Antennæ extending to the base of the abdomen, sparsely haired, pale yellowish, 17 sessile segments, the fifth with a length over twice its diameter. Mesonotum fuscous yellowish, the submedian lines sparsely black haired. Scutellum yellowish, reddish apically, sparsely black haired. Postscutellum yellowish orange. Abdomen mostly deep red, the sclerites dark brown, the basal and distal segments yellowish. Halteres dark reddish. Femora a variable fuscous yellowish or fuscous. Tibiæ and tarsi black. Ovipositor short, the terminal lobes broadly and roundly triangular and thickly clothed with short setæ. Type Cecid. A. 2521.

The species described above closely approaches in general appearance *Walshomyia juniperina* Felt, from which it may be readily distinguished by the biarticulate palpi and marked differences in the structure of the genitalia.

This insect occurs in a purplish, somewhat conical, thick walled, apical bud gall with a length of about 1 cm. and a diameter of 3 mm. When mature the tip splits, forming four or more irregular lobes, the adult escaping from the apex. This gall develops later than that of *Walshomyia texana* according to J. T. Patterson of the University of Texas. This species has been reared from *Juniperus monospermum* from galls collected near Denver, Colo., in 1914, by Professor E. Bethel and from similar galls on *Juniperus utahensis* collected by Professor Bethel at Gilluly, Utah, and also from apparently identical galls on *Sabina sabinoides* collected by J. T. Patterson in April, 1919, near Austin, Texas. The gall has been figured by Mr. Patterson on page 345 of the November, 1919, issue of the Journal of Heredity, volume 10.

Rhopalomyia weldi new species.

Gall. Dark purplish, fusiform, frequently clustered bud galls with a length about 1 cm. and a diameter of .5 cm. Clusters of six or seven are not unusual though occasionally only three or four, or one or two may develop upon a shoot. One small shoot bore eleven galls.

Larva. No larva were found though Mr. Weld stated that they were orange colored.

Pupa. Length 4 mm. Antennal cases fuscous yellowish, eye, wing and leg cases black, mesonotum yellowish orange, abdomen reddish orange with rather thick fuscous hairs on the dorsal sclerites.

Male. Length 4 mm. Antennæ nearly as long as the body, sparsely haired, 18 segments, the fifth with a stem three fourths the length of the basal enlargement, which latter has a length one and three fourths times its diameter. Terminal segment with a narrowly fusiform, pseudo-articulate apex as long as the basal enlargement, the latter with a length nearly three times its diameter. Palpus consisting of one small, narrowly oval segment. Mesonotum shining dark brown. Scutellum and postscutellum dark brown. Abdomen fuscous yellowish. Genitalia fuscous. Halteres fuscous apically, yellowish basally, legs a nearly uniform fuscous straw. Claws long, slender, rather strongly curved apically, the pulvilli nearly as long as the claws. Genitalia, basal clasp segment long, stout, terminal clasp segment short, stout, subfusiform; dorsal plate deeply and triangularly emarginate, the lobes obliquely truncate, ventral plate broad, broadly rounded apically.

Female. Length 3 mm. Antennæ about three fourths the length of the body, sparsely haired, fuscous yellowish, 18 or 19 sessile segments, the fifth with a length 2½ times its diameter, the terminal segment produced, with a length over three times its diameter. Mesonotum shining dark brown. Scutellum and postscutellum a little darker, abdomen deep red, sparsely clothed

with fuscous hairs. Ovipositor yellowish orange. Halteres yellowish basally, fuscous subapically, pale orange apically. Coxæ mostly dark brown, the legs a somewhat variable fuscous straw. Ovipositor as long as the abdomen, the terminal lobes rather slender, with a length four times the width and sparsely setose. Type C. a 2985.

The species described above falls in our key next to *R. bulbula* Felt and *R. lateriflori* Felt, from both of which it is distinguished by habits, colorational characters and variations in antennal and genitalial structure. The galls were collected by Mr. L. H. Weld at Glencoe, Ill., May 12, 1919, a few midges emerging on their reception May 15. The galls occur on the subterranean stems or root stalks of *Aster macrophyllus*, pushing up through the dead leaves in the spring and when numerous preventing the development of the foliage. This species appears to be somewhat badly parasitized, the parasites forming a series of cocoons, usually consisting of two or three bundles adherent at the ends; one mass contained as many as fifteen, though the average number is usually less.

Walshomyia insignis new species.

Gall. This is a somewhat yellowish leaf tip, hardly distinguishable from the normal. The female escapes near the apex.

Exuvium. Length 1.5 mm. Whitish with a distinct fuscous shade on the wings, thorax and antennal cases.

Female. Length 1.75 mm. Antennæ extending to the second abdominal segment, sparsely haired, reddish brown, the basal segments lighter, 14 sessile segments, the fifth with a length 2¼ times its diameter and with moderately high circumfila at the basal third and subapically and on the distal ⅔, a series of six or seven anastomosing transverse ridges, apparently chitinous and independent of the circumfila; the terminal segments consisting of two closely fused, the apex obtuse. Palpus consisting of one short, irregular, coarsely setose segment. Mesonotum reddish brown, scutellum dark reddish, postscutellum orange reddish, abdomen sparsely haired, mostly deep red, the seventh and eighth segments with a yellowish cast. Halteres fuscous orange, fuscous subapically. Coxæ fuscous yellowish, the legs mostly a fuscous straw. Claws moderately slender, strongly curved, the pulvilli about twice the length of the claws. Ovipositor short, stout, striate, the terminal lobes roundly oval and thickly clothed with short, stout setæ. Type A 2962.

The peculiar female characterized above and tentatively referred to this genus, was reared from an oval, apical bud gall on cedar, collected by Mr. J. M. Del Curto, Austin, Texas, March 26, 1919, and

identified by Doctor H. D. House, State Botanist, as *Juniperus scopulorum*. The adult issued March 31, and is noteworthy because of the numerous peculiar transverse elevations on the antennal segments, suggesting circumfila, though in reality probably transverse chitinous ridges.

Winnertzia fungicola new species.

Male. Length 1.5 mm. Antennæ a little shorter than the body, sparsely haired, dark brown, 14 segments, the 5th with a stem ¾ the length of the basal enlargement, which latter has a length ½ greater than its diameter. Terminal segment produced, narrowly conical, with a length fully four times its diameter. Palpi; first segment with a length over twice its diameter, the second nearly twice as long, the third about as long as the second and the fourth nearly one half longer than the third. Entire body a nearly uniform bronzy dark brown. Halteres fuscous yellowish, lighter basally, coxæ mostly dark brown, the legs a variable straw color except for the dark brown of the anterior tarsi. Claws moderately long, stout, strongly curved, the pulvilli as long as the claws. Genitalia; basal clasp segment moderately long, stout, terminal clasp segment with a length over twice its diameter, distinctly dentate apically, dorsal plate broadly and slightly emarginate, ventral plate divided, the lobes broadly and irregularly rounded.

Female. Length 2 mm. Antennæ extending to the second abdominal segment, sparsely haired, dark brown, 14 sessile segments, the 5th with a length twice its diameter, the terminal segment somewhat produced, with a length fully 2½ times its diameter, the distal third tapering strongly. Mesonotum sparsely haired, purplish dark brown. Scutellum yellowish brown, postscutellum dark purplish brown, abdomen dark brown, with a yellowish cast. Halteres fuscous yellowish, coxæ dark brown, legs mostly dark straw. Ovipositor moderately long, stout, the triarticulate terminal lobes attached to a quadrate basal portion, apparently the terminal segment of the ovipositor. Basal segment of the terminal lobe subquadrate, with a length ¾ its diameter, the second irregularly oval with a length ½ greater than its diameter, the third narrowly oval and with a length nearly three times its diameter. Type Cecid. 1797, 1798.

The midges described above were reared by H. B. Weiss, March 31, from a fungus, *Lenzites sæpiaria*, collected at Plainfield, N. J., and submitted for identification by Professor C. W. Johnson of Boston, Mass. The male is closely related to *W. rubida* Felt, though this species is distinctly larger, stouter and more heavily chitinized, and presents some differences in antennal and genitalic structures in particular.